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NOTES ON GEOGRAPHIC DISTRIBUTION

Amphibia, Anura, Hylidae, *Phyllomedusa tarsius* Cope, 1868: Distribution extension, new country record and geographic distribution map

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ABSTRACT: We provide a review of the geographic distribution of *Phyllomedusa tarsius*. A new record from Guyana corresponds to the eastern limit of the range for the species, which now includes the Guiana shield.

Phyllomedusa tarsius Cope, 1868 is a large Phyllomedusine of the *P. tarsius* group, widespread in the Western portion of the Amazon Basin (Duellman 1974; Frost 2011). It was originally described based on a single specimen, now presumably lost (Duellman 1974), collected on the margin of the Rio Amazonas (Amazon River), below the mouth of the Napo River, Loreto, Peru. Duellman (1974) reviewed previous works concerning the genus *Phyllomedusa* and synonymized *P. nicefori, P. edentula* and *P. orcesi* with *P. tarsius*, providing a complete description and distribution range for the species. According to Duellman (1974), *P. tarsius* only occurs in the upper Amazon Basin, in southern Colombia, Ecuador and Peru.

The *Phyllomedusa tarsius* group was first proposed by De la Riva (1999) when describing *P. camba.* In this paper the author groups *P. boliviana, P. camba, P. coelestis, P. tarsius, P. trinitatis* and *P. venusta* in the *tarsius* group. Studying the phylogenetic relationships within hylids, Faivovich *et al.* (2005) included *P. sauvagii* in the *P. tarsius* group, but the only species analyzed by the authors was *P. tarsius.* Barrio-Amorós (2006) suggested excluding *P. boliviana* and *P. camba* (included by De la Riva 1999) and *P. sauvagii* (included by Faivovich *et al.* 2005) because those species do not share what the author suggests as synapomorphy of the group: the golden iris with black reticulations. In a phylogenetic context Faivovich *et al.* (2010) tested the hypotheses of Barrio-Amorós (2006) for *P. tarsius* group and recovered the species *P. neildi, P. tarsius,* and *P. trinitatis* as a monophyletic group, excluding *P. boliviana* and *P. sauvagii*, and defining *P. camba* as sister-group.

The first record of *P. tarsius* in Venezuela was given for the province of Barinas (La Marca 1996). Duellman (1997) and Markezich (1998) further recorded the species in the provinces of Bolivar and Portuguesa, respectively. In Brazil, the species was recorded in the region of Manaus (Schmidt and Amézquita 2001), and in the Reserva Adolpho Ducke (Lima *et al*. 2006), both in Amazonas, and in the state of Rondônia (Bernarde 2007). Doan and Arriaga (2002) recorded *P. tarsius* in the Tambopata region, Peru. The record for Guyana by Reynolds *et al.* (2001) (see also Señaris and MacCulloch 2005) is problematic because it is based on a specimen without exact locality data, and whose identity has not been confirmed by the authors (R. MacCulloch pers. comm.). Here we present two new records of *P. tarsius* in Guyana, which are the first confirmed records for this country (Figure 1).

On March 24th 2011, in the vicinity of the Kuribrong River, Potaro-Siparuni District, Guyana, on the access road to the Powis Mining Camp, we collected two male specimens of *P. tarsius* on vegetation 1.5 m above the ground and near a pond on the edge of the forest (05°30'56" N; 59°03'25" W, elevation 130 m). The second collection (one male and one female) occurred on April 4th 2011, at a temporary pond beside a road (05°33'37" N; 59°17'36" W, elevation 73 m). The male was calling on vegetation approximately 1.4 m above ground, while the female was on a nearby branch 1.7 m above ground. The vegetation type in the area corresponds to a "*terra-firme*" forest dominated by large trees. The understory is not very dense, except in regeneration areas. These records extend the known geographic distribution of the species *ca.* 247 km southeast. The region is under strong anthropogenic pressure due to mining and deforestation activities. All specimens were collected under the permit reference # 030510 BR 130, issued by the Guyana Environmental Protection Agency.

In the same location we found two other species of *Phyllomedusa* (*P. bicolor* and *P. tomopterna*) and at a nearby site we found *P. vaillantii*. *Phyllomedusa hypochondrialis* also occurs in the area. *Phyllomedusa tarsius* can be easily distinguished from these four species by its size (*P. tomopterna* and *P. hypochondrialis* are much smaller while *P. bicolor* is larger and *P. vaillantii* smaller), the flanks and internal surfaces of hind limbs that are marked with

individual or confluent cream and white spots (orange or reddish with vertical black stripes on *P. tomopterna* and *P. hypochondrialis;* cream, orange or reddish ocelli in *P. vaillantii*), and the presence of a golden iris with black reticulations (iris silvery or grayish on *P. bicolor*, *P. tomopterna, P. hypochondrialis* and *P. vaillantii*).

All specimens (Figure 2) agree with the description given by Duellman (1974), and exhibit the following relevant characteristics: iris bright-orange with bold black reticulations; dorsum slightly granular; first finger shorter than and opposable to second finger; first toe longer than and opposable to second toe; discs on fingers large; forearm much more robust than upper arm; calcar absent; anal opening directed posteroventrally at mid-level of thighs; dorsal surfaces and side of head green; flanks marked by discrete or confluent cream spots; white spot present on chest; pair of white para-anal spots present; throat and chest grayish brown; margin of lower lip dull cream (Figure 2). The SVL for the males agrees with Duellman's (1974) description (mean=82.03mm; n=3) although the female is smaller (89.92 mm). Specimens were deposited in the herpetological collection of the Centre for the Study of Biological Diversity at the University of Guyana under the numbers UGCSBD HA1000, 1001, 1100, 1101.

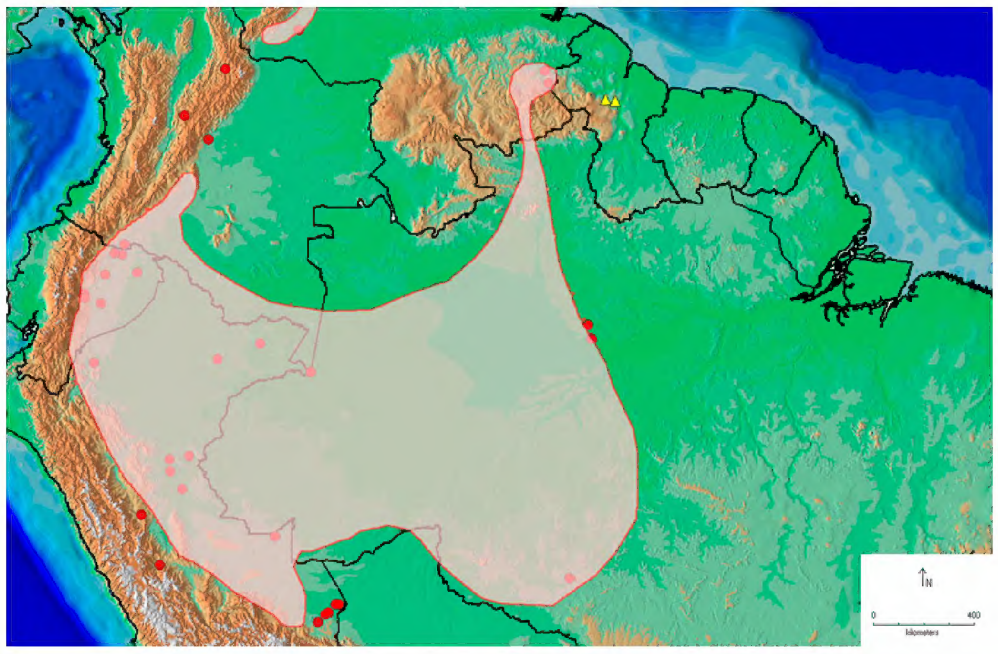

Figure 1. Geographic distribution of *Phyllomedusa tarsius*. Red circles: records from literature. Salmon shade: Geographic distribution according to IUCN (La Marca *et al.* 2004). Yellow triangles: new records in Guyana.

According to the International Union for Conservation of Nature (IUCN), P. *tarsius* is listed as "Least Concern" due to its wide distribution, tolerance of habitat modification, and a presumed large population size (La Marca *et. al.* 2004). Considering the morphological variation of *P. tarsius* and its known widespread geographic distribution, a detailed taxonomic review is recommended.

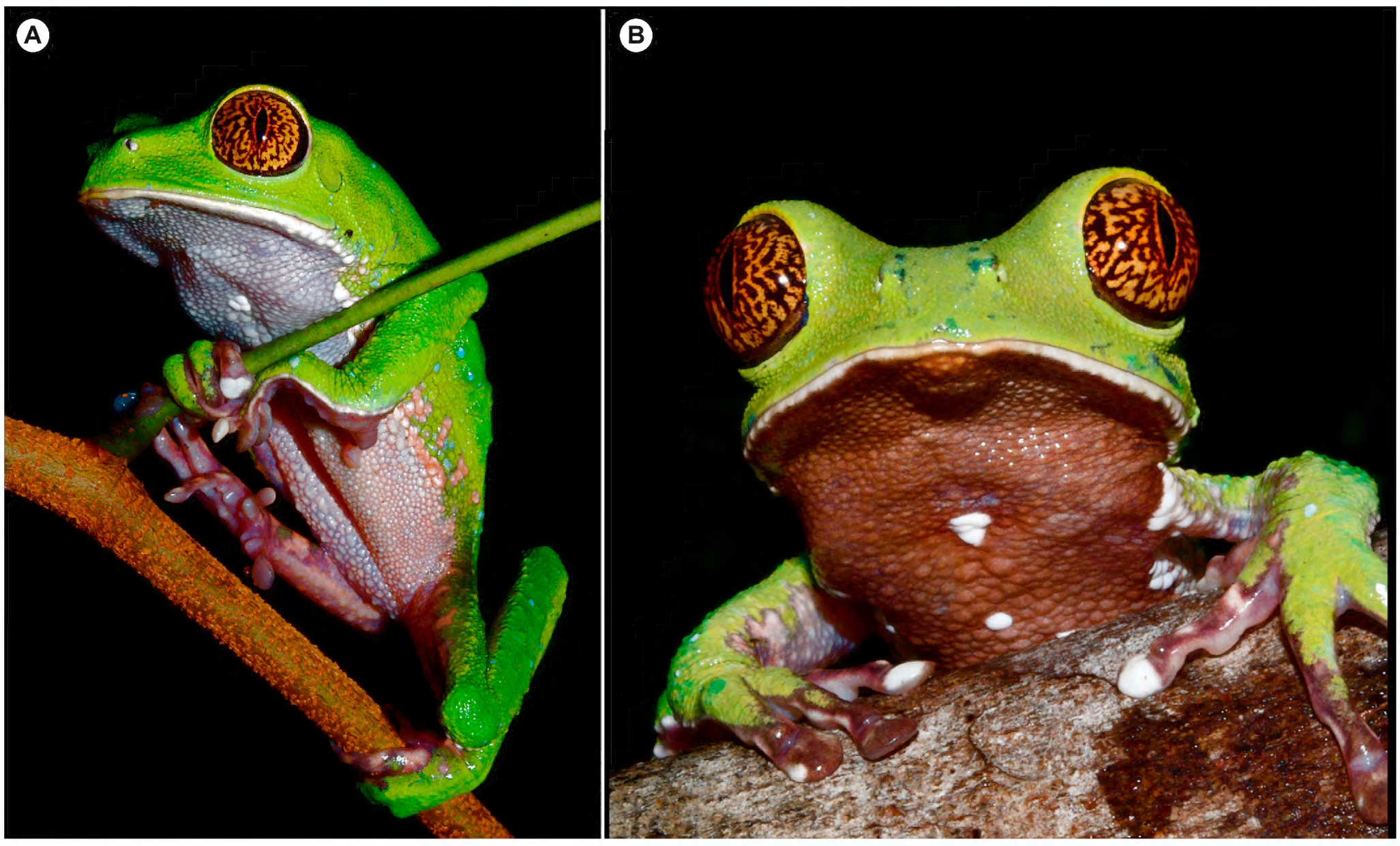

Figure 2. Specimens of *Phyllomedusa tarsius* collected in Guyana. A: UGCSBD HA1000 B: UGCSBD HA1001.

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